



**North Carolina Community College System
Office**

**Information Technology Plan
For 2014-2016 Biennium**

Dr. Scott Ralls

Prepared: October 1, 2014

Copyright © 2014 North Carolina Community College System. All Rights Reserved.

This document, and all subsequent revisions, are the property of the North Carolina Community College System, and can be used or copied only in accordance with the NCCCS System Office policies in effect. All requests should be sent to the [College User Support Team](#).

Table of Contents

1	Introduction	3
1.1	<i>Purpose</i>	3
1.2	<i>North Carolina Community College System Office Information Technology Plan Roadmap.....</i>	4
2	North Carolina Community College System Office IT Plan Executive Summary..	17
3	Guidance	18
3.1	<i>SCIO Guidance.....</i>	18
4	North Carolina Community College System Office Vision, Mission, Values and Goals 20	
4.1	<i>North Carolina Community College System Office Vision</i>	20
4.2	<i>North Carolina Community College System Office Mission.....</i>	20
4.3	<i>North Carolina Community College System Office Values</i>	20
4.4	<i>Agency Goals</i>	20
4.4.1	<i>Advocacy through education, evaluation, and collaboration</i>	21
4.4.2	<i>Support for community colleges through service delivery and partnership</i>	22
4.4.3	<i>Oversight for community colleges through governance, tracking, and best practices</i>	23
5	North Carolina Community College System Office Technology Solutions and Distance Learning Division Vision, Mission, and Values.....	25
5.1	<i>Technology Solutions and Distance Learning Division Vision.....</i>	25
5.2	<i>Technology Solutions and Distance Learning Division Mission</i>	25
5.3	<i>Technology Solutions and Distance Learning Division Values.....</i>	25
5.4	<i>Technology Solutions and Distance Learning Division Strategic Diagrams.....</i>	26
6	North Carolina Community College System Office Technology Solutions and Distance Learning Goals, Objectives and Initiatives	28
6.1	<i>Goal 1 – College Information System (CIS) Modernization</i>	28
6.1.1	<i>Objective – Provide community colleges with technologies that meet current and future business needs.</i>	28
6.2	<i>Goal 2 – Improve Data Quality and Electronic Reporting</i>	29
6.2.1	<i>Objective – Establish a robust data system that provides accurate and accessible information that fosters a culture of data-driven decision making which addresses research questions and informs policies.</i>	29
6.3	<i>Goal 3 – Continuously Improve Access, Communications, Operations, and Maintenance.....</i>	30
6.3.1	<i>Objective 3 – Engineer infrastructure and business processes to align with future agency and community college technology requirements.....</i>	30
7	North Carolina Community College System Office IT Organizational Structure (Reporting Structure)	38
8	Additional Agency Requirements	39
8.1	<i>Innovative Funding Solutions.....</i>	39
8.2	<i>Opportunities for Statewide Initiatives.....</i>	39

Appendix A - List of Major IT Projects	40
---	-----------

1 Introduction

1.1 Purpose

The purpose of this document is to provide agency data for the Information Technology Plan for the 2014-2016 Biennium to the North Carolina State Chief Information Officer (SCIO) as required by G.S. 147-33.72B. The statute mandates that each agency submit a technology plan to the SCIO by October 1 of each even-numbered year. The State Information Technology Plan (Plan) is required to cover a five-year time period. To properly inform the Plan, agency plans are also required to cover a five-year time period.

1.2 North Carolina Community College System Office Information Technology Plan Roadmap

Goal	Objective	Initiative	Description	Funding Mechanism
Work collaboratively to ensure that North Carolina's workforce is prepared to meet the needs of North Carolina by continuing to move forward with <i>SuccessNC</i> .	Align Agency, community colleges, Department of Commerce, and other state and local partners' efforts with industry needs while providing pathways for student completion.	Align4NCWorks	Align4NCWorks is the NC Community College System's strategic initiative to scale up best practices in collaborative workforce development. The initiative focuses on key partnerships among community colleges, business/industry, workforce development boards, public schools, and economic development entities.	System Office operating budget
		Career and College Promise	Success in today's global economy may require a two-or four-year degree, a certificate, or a diploma. Through Career & College Promise (CCP), qualified high school age students in North Carolina have the opportunity to pursue these options, tuition free, while they are in high school, allowing them to get a jump start on their workplace and college preparation.	System Office operating budget

Goal	Objective	Initiative	Description	Funding Mechanism
		North Carolina Comprehensive Articulation Agreement	<p>The North Carolina Comprehensive Articulation Agreement (CAA) is a statewide agreement governing the transfer of credits between NC community colleges and NC public universities and has as its objective the smooth transfer of students.</p> <p>The CAA provides certain assurances to the transferring student. For example, the CAA:</p> <ul style="list-style-type: none"> • Assures admission to one of the 16 UNC institutions (Transfer Assured Admissions Policy) • Enables NC community college graduates of two-year Associate in Arts and Associate in Science degree programs who are admitted to constituent institutions of the university of NC to transfer with junior status. 	System Office operating budget
		Adult Basic Education	Adult Basic Education is a program of instruction designed for adults who function below the high school level. Instruction is offered in reading, writing, math, and English.	System Office operating budget

Goal	Objective	Initiative	Description	Funding Mechanism
		Developmental Education Initiative	This state-policy initiative redesigns the NCCCS developmental education curriculum, accelerates student completion, implements diagnostic assessments, increases the number of students who successfully complete developmental education and enroll in college-level courses, and implements supporting policies.	
		Basic Skills Plus	Basic Skills Plus provides opportunities for adult high school equivalency students to dual-enroll in developmental, occupational training, or curriculum certificate courses. Tuition is waived.	System Office operating budget
		High School Equivalency Assessments	Traditionally known by the vendor who supplies this testing service (GED®), the System Office has issued an RFP to identify a vendor who can satisfy mandatory requirements for the paper-based and computer-based High School Equivalency Assessment test. From July 1, 2012 through June 30, 2013, 25,744 North Carolina residents took the GED® Test at official testing site locations. North Carolina awarded 14,300 GED®	System Office operating budget

Goal	Objective	Initiative	Description	Funding Mechanism
			diplomas during this period. This credential is understood to be one of the critical success factors for citizens entering the work force.	
		Veterans and Credit for Prior Learning	This initiative provides credits for prior experience for military veterans. If veterans can get college credits for skills they learned in the military, they would be able to complete college faster and would be more likely to earn a degree or credential.	System Office operating budget; State Board Reserve
		P20-W	P20-W is a jointly planned effort between the North Carolina Community College System, the University of North Carolina, the Department of Public Instruction, and the Department of Labor to build a data tracking system to track students from pre-school through high school and college, and into the workplace.	System Office operating budget; P20-W federal grant funds
Simplify business processes and enhance operations for academic citizens, community colleges, and the System Office.	Identify areas where efficiencies can be gained by improving agency governance and clarifying business processes for community colleges, staff, students, and	State Board Code	By June 30, 2016, the State Board will adopt rules that are clear, consistent with State law while promoting the System's mission.	System Office operating budget
		Tiered/ Performance Based Funding	This initiative will add two funding models and the policies and procedures to	System Office operating budget

Goal	Objective	Initiative	Description	Funding Mechanism
	citizens.		<p>support their implementation:</p> <p>Develop Tier Funding Model to support the allocation categorical funding for Health Sciences, Technical Education, and the Special High Cost Allotment for Heavy Equipment with formula funds to support curriculum instruction.</p> <p>-and-</p> <p>Develop performance indicator and allocate a percentage of funds based on a college's performance on each indicator and the policy and procedures to support implementation.</p>	
		State Authorization of Distance Learning	The State Authorization of Distance Learning will assist colleges in meeting federal and state requirements for delivering distance courses and programs to students residing in other states while ensuring program integrity of distance delivery. Options include national reciprocity, regional reciprocity, or individual state-by-state approvals.	System Office operating budget
		Financial Aid Simplification	Financial Aid Simplification will assist financial aid administrators, college	System Office operating budget;

Goal	Objective	Initiative	Description	Funding Mechanism
			staff, students, and their families by freeing financial aid personnel from time-consuming “policing and processing” responsibilities. Simplifying financial aid will remove a significant barrier to community college education and provide more efficient delivery of financial assistance services to North Carolina citizens.	College formula funding
Modernize Information Technology, Information Technology Skills, and Information Technology Processes to meet current and future stakeholder requirements.	Create a technological environment that meets and exceeds current business need, encourages employee development, and promotes success.	College Information System (CIS) Modernization - Platform Migration	The CIS Modernization Platform Migration will transition the College Information System to Microsoft based technologies.	CIS Special (Accrual) Fund
		Data Initiative	The Data Initiative ensures access to timely and reliable data by identifying and defining data elements, augmenting current reporting tools, and improving data extraction validation methods.	System Office operating budget
		Electronic Forms (DocuSign)	DocuSign software will be utilized to automate paper-based form processes to electronic workflows.	System Office operating budget
		Firewall Security Audit	A thorough review and audit of the System Office Cisco ASA5515 Firewalls must be conducted to ensure optimal	System Office operating budget

Goal	Objective	Initiative	Description	Funding Mechanism
			configuration to maintain a healthy and secure network.	
		Core Switch Refresh	The existing Cisco 4507 Core Switch must be refreshed to maintain a modern, secure, and supported network for the System Office.	System Office operating budget
		Student Self-Service	A new Web User facing technology that provides features in a new integrated manner must be implemented to replace current web access that is being phased out.	System Office operating budget
		Mobile Technologies	The latest software modules must be implemented for the College Information System to provide 'any time, any place, and any student' access to relevant and secure community college data.	System Office operating budget
		Moodle Managed Services (SaaS)	This SaaS solution provides a 24x7x365 integrated course management solution, hosted hardware, application administration, administrator help desk support, and training to sustain the centralized Moodle implementation with the capacity to support at least three Moodle instances per college. This solution also	General Fund appropriation

Goal	Objective	Initiative	Description	Funding Mechanism
			provides consistency of services and training across the system while still allowing branding of the online course delivery for the local college and offering the computing power, data storage, and Moodle expertise that the colleges do not have or could not afford without System Office support.	
		North Carolina Learning Object Repository (NCLOR)	The NCLOR provides all community colleges and K-12 with access to a state-of-the-art digital teaching and learning platform that provides learning objects (digital resources) suitable for customized needs of colleges and regional/statewide initiatives. The repository contains more than 50,000 learning objects that match the criteria of curriculum and continuing education courses or programs.	General Fund appropriation
		Virtual Computing Environment (VCE) NCCCS/UNC Collaboration	Students and faculty can use advanced computer applications on Linux, Solaris, and numerous Windows environments. The VCE addresses the increasing needs of both local and distance students and faculty by providing 24x7 access to state-of-the-art secure advanced computing laboratory	General Fund appropriation

Goal	Objective	Initiative	Description	Funding Mechanism
			facilities for students, either in the classroom or individually. Access to VCL services can be (1) at the direction of classroom instructors or (2) for individual student coursework on an anytime, anyplace basis.	
		Virtual Learning Community (VLC)	The VLC is a collaborative effort of the North Carolina Community College System to increase the quality and availability of online learning and support services for the benefit and success of distance learning students. The VLC Professional Development Center at Wake Technical Community College coordinates efforts to deliver the training opportunities necessary to deliver online courses and programs based on sound pedagogy and the latest technology tools. The VLC Technology Center at Fayetteville Technical Community College coordinates a vetting process for learning technologies to address the rapid changes in online course delivery. Course redesign, editing or content development, research, best practices or standards development,	General Fund appropriation

Goal	Objective	Initiative	Description	Funding Mechanism
			and needs assessment are coordinated by the Quality and Assessment Center at Surry Community College.	
		Broadband Data Connectivity	The System Office will continue to partner with all educational sectors in North Carolina for the most efficient connectivity to the internet and internet 2 via high speed broadband for teaching and learning purposes.	General Fund appropriation
		Sirsi-Dynix	Sirsi-Dynix, Inc. provides the software licensing, servers, and maintenance support for the central library system for the Community College Libraries in North Carolina (CCLINC) consortium. SaaS services provide decreased hardware costs, a higher threshold for number of titles held in the shared catalog, and increased student access to library resources, as well as cost savings for NCCCS. This project is near closeout and will move to operations and maintenance phase in 2014.	General Fund appropriation
		Student Enhancements	Changes to the student functions of the CIS Template that support changes in business requirements must be	System Office operating budget

Goal	Objective	Initiative	Description	Funding Mechanism
			developed and implemented. Areas impacted include improved course transfers between community colleges and the UNC System, Development Education tracking, and e-transcript request and transfer systems.	
		Finance Enhancements	Develop and implement changes to College Finance systems and the CBAS system at the System Office to improve and streamline processes and improve efficiencies based on business requirements.	System Office operating budget

Goal	Objective	Initiative	Description	Funding Mechanism
		Learning Technology Modernization	The System Office will evaluate opportunities to create technology efficiencies through automated systems/processes such as ILP and LMS integration, IAM (Identity Access Management) solutions for colleges, consortia, or statewide pricing for learning management systems (Blackboard and Moodle), learning technology tools, or technology resources for our colleges (video streaming options, online tutoring, advising/counseling, ADA compliant resources, captioning, etc.), additional functionality or interoperability of existing systems, and additional storage capacity for digital resources.	To be determined
Align the North Carolina Community College System Office with the Office of Information Technology Services (OITS) Infrastructure Restructure	Reduce duplicity and rework by investigating potential opportunity for leveraging existing and future technology infrastructure services.	Consolidated Help Desk for College Information Systems and Learning Management Systems	The System Office will evaluate current and future help desk support needs for System Office and community colleges' applications.	General Fund appropriation

Goal	Objective	Initiative	Description	Funding Mechanism
		(application support)		
		CIS Modernization – Data Center Hosting	The System Office will collaborate with the Office of Information Technology Services on modernization of hosting to solve North Carolina problems and identify efficiencies.	Expansion Budget Request
		Government Data Analytics Center (GDAC)	The System Office will partner with the Office of Information Technology Services and GDAC to ensure the System Office and 58 colleges are strategically aligned with efficient data quality measures and analytics.	System Office operating budget

2 North Carolina Community College System Office IT Plan Executive Summary

The North Carolina Community College System Office Information Technology Plan for the 2014-2016 Biennium describes how the agency will deliver modern business automation processes that benefit the academic citizens of North Carolina while operating and maintaining current higher educational technologies. This balanced approach will deliver technological solutions that create success by reducing barriers to higher education and promoting a stronger North Carolina that connects academic citizens, businesses, education, and government. This plan presents goals with supporting initiatives that identify efficient methods to produce sustainable educational and economic growth through strategic collaboration with the 58 community colleges while aligning with the Office of Information Technology Services strategy of One IT.

During the next five years, the System Office's Technology Solutions and Distance Learning Division will modernize the College Information System (CIS). This effort will include:

- Improving data analytics and increasing electronic reporting capabilities
- Transitioning legacy technologies to modern, scalable solutions
- Continuously improving operational and maintenance processes through application and service enhancement
- Investing in technical training for agency and community college staff

These goals will be achieved by multiple measures, including accomplishments and lessons learned from the SuccessNC initiatives conducted during the previous biennium, and by establishing new partnerships with both public agencies and private organizations. The System Office looks forward to continuing the establishment and facilitation of modern higher education best practices that enable success, improve access, and deliver excellence to the North Carolina Community College System.

3 Guidance

3.1 SCIO Guidance

IT Vision

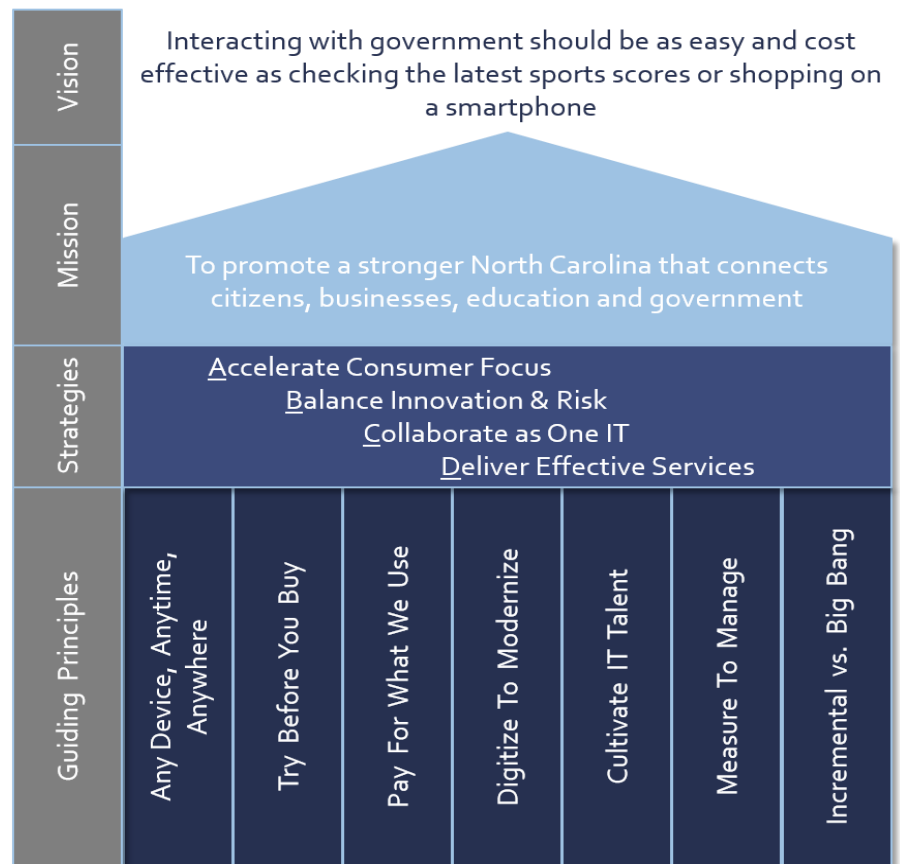
Making government services more accessible and efficient for all consumers is the foundation of the One IT strategy.

IT Mission

Promoting a stronger North Carolina that connects citizens, businesses, education, and government is the mission of IT.

IT Strategies

Strategies focus organizations to achieve complicated goals or objectives. With an eye to the future while sustaining current foundational requirements, the SCIO has adopted the “ABC” strategy to fix and modernize IT.



IT Vision, Mission, and Strategies

Strategy		Intended To
A.	Accelerate Consumer Focus	Embrace the consumerization of IT with a focus on the requirements of the consumer of technology
B.	Balance Innovation and Risk	Try newer technologies while managing enterprise risk
C.	Collaborate as One IT	Work as a team to accomplish our mission
D.	Deliver Effective Operations	Focus on achieving business outcomes through effective and efficient technology delivery

In addition to the seven guiding principles outlined above, the SCIO’s [Cabinet Unite IT Strategy](#) focuses strongly on collaborative IT governance, big data, and analytics (to include, but not limited to, work with GDAC and GIS), IT operations, and innovation.

The table below outlines the six IT business capabilities and five IT organizational capabilities highlighted in the Cabinet Unite IT Strategy.

Business Capabilities	Organizational Capabilities
Digital Focus	Collaborative IT Governance
Big Data and Analytics	Strategic Planning and Architecture
Enterprise Resource Planning	IT Program and Project Management
Application and Service Modernization	Innovation
Risk Management and Security	Talent Development and Management
IT Operations	

Please consider these areas, along with the seven guiding principles and your agency-specific goals and objectives when creating agency IT goals and objectives.

4 North Carolina Community College System Office Vision, Mission, Values and Goals

4.1 North Carolina Community College System Office Vision

One Team with One Voice... Serving 58.

4.2 North Carolina Community College System Office Mission

The mission of the North Carolina Community College System is to open the door to high-quality, accessible educational opportunities that minimize barriers to post-secondary education, maximize student success, develop a globally and multi-culturally competent workforce, and improve the lives and well-being of individuals by providing:

- Education, training and retraining for the workforce including basic skills and literacy education, occupational and pre-baccalaureate programs.
- Support for economic development through services to and in partnership with business and industry and in collaboration with the University of North Carolina System and private colleges and universities.
- Services to communities and individuals which improve the quality of life.

4.3 North Carolina Community College System Office Values

Integrity – Demonstrating professional ethics in a fair and honest manner

Accountability – Taking responsibility to deliver excellent service while maintaining transparency

Collaboration – Exhibiting a sense of community by encouraging teamwork, support and open communication

Service – Being responsive, dedicated and committed to the people we serve

4.4 Agency Goals

The North Carolina Community College System Office has identified three primary goals for inclusion in the Information Technology Plan for the 2014-16 Biennium: to provide advocacy, support, and oversight for the community college system. The System Office considers these three goals critical to the successful delivery of relevant and timely higher educational opportunities that result in a global, diverse, and competent workforce capable of improving the lives and well-being for all citizens of North Carolina.

The System Office, under the guidance of President Scott Ralls and the State Board of Community Colleges, conducts work in support of these goals under the guiding principles established by the SuccessNC initiative. These guiding principles are:

- Improve Student Success: Increase the number of students leaving with a job-ready credential that can lead to becoming a successful employee or employer in a global economy and provide for better skills, better jobs, better pay, and continued educational attainment.

- Increase Student Access: Develop policies and practices that provide increased opportunities for students to enter into and proceed successfully through post-secondary education and training programs.
- Ensure Program Excellence: Examine and continually improve rigor, relevance, and quality in all academic and training opportunities to ensure that successful completion equates to a competitive position in the workforce or in the attainment of higher educational goals.

Success, access, and excellence provide the foundation upon which the System Office develops strategic initiatives focused on advocacy, support, and oversight for the North Carolina Community College System.

4.4.1 Advocacy through education, evaluation, and collaboration

The System Office advocates for the success of the 58 community colleges that comprise the North Carolina Community College System. This role includes providing relevant information that supports the entire community college system as well as individual college needs. This information is derived from the evaluation of legislation, policy, partnerships, and program initiatives that shape budget and resource allocation for the community college system.

The System Office communicates with a broad audience including federal, state and local agencies, governing boards and legislatures, private industry, and local communities to explain methods in which they may work collaboratively and leverage the value provided by community college educational opportunities. These opportunities include the development of custom training programs aligned with regional industry need, continuing education, and basic skills training. This advocacy supports citizens' abilities to participate in the community college system, successfully complete an academic program of their choice, and improve their lives and well-being while contributing to economic growth and sustainability in North Carolina.

Advocacy initiatives identified as priorities by the agency include:

- Align4NCWorks – Align4NCWorks is the North Carolina Community College System's strategic initiative to scale up best practices in collaborative workforce development and enhance the connection between workforce and economic development. This initiative focuses on key partnerships community colleges have with business and industry, workforce development, and public schools. The goal is for Align4NCWorks partners to take their existing alliances to the next level to ensure that NC's workforce is #1 in the nation.
- Adult Basic Education – Adult Basic Education is a program of instruction designed for adults who function below the high school level. Instruction is offered in reading, writing, math, and English. This initiative includes identifying new processes for delivery of the Adult High School Equivalency Assessments and interfacing with the Federal Workforce Innovation and Opportunity Act Legislation and the Basic Skills Plus programs.
- Developmental Education – The Developmental Education state policy initiative redesigns the developmental education curriculum, accelerates student completion, implements diagnostic assessments, increases the number of students who

successfully complete developmental education and enroll in college-level courses, and implements supporting policies. This initiative includes North Carolina Diagnostic and Placement test, Multiple Measures, Developmental Reading and English Implementation, and Developmental Math Shells and Modules.

- North Carolina Comprehensive Articulation Agreement – The North Carolina Comprehensive Articulation Agreement (CAA) is a statewide agreement that governs the transfer of credits between community colleges and public universities with the objective for the smooth transfer of students. This agreement provides certain assurances to the transferring student such as assuring admission to one of the 16 UNC institutions and/or enabling community college graduates with two-year Associate in Arts and Associate in Science degree programs to be admitted to constituent institutions of the university system to transfer with junior status.

The System Office Technology Solutions and Distance Learning Division supports the agency in this role through the delivery of technologies that make relevant information accessible to consumers in a timely and reliable way. An example of this effort includes the Combined Course Library and Program of Study (CCL/POS) configurations developed in conjunction with the Academic Programs section. The CCL/POS standardizes curriculum and continuing education courses across the entire community college system. Without this technology, initiatives such as the North Carolina Comprehensive Articulation Agreement, the process enabling the seamless transfer of educational credit between community colleges and public universities, would not be possible. The configurations within the CCL/POS rely on complex technologies maintained and operated by the Division.

4.4.2 Support for community colleges through service delivery and partnership

The System Office provides support for the community colleges through the delivery of services that streamline business processes and increase access to educational opportunities for the citizens of North Carolina. These support services are delivered to each business division at a community college including finance, financial aid, human resources, and student services.

Support initiatives identified as priorities by the agency include:

- Financial Aid Simplification – The goal of financial aid simplification is to assist administrators, the college generally, and students and their families specifically by freeing financial aid personnel from time-consuming “policing and processing” responsibilities and enabling first-generation and non-traditional students to access education through financial assistance.
- Developmental Education Initiative – Through the Developmental Education Initiative, North Carolina is one of six states working to create more supportive policies to increase student success and credential completion. Using data-driven approaches, the Developmental Education Initiative specifically focuses on developing statewide strategies and innovations that will increase the number of students enrolling in and completing college-level courses.
- Yellow Ribbon G.I. Education Enhancement Program – This program funds financial aid for eligible military veterans and dependents attending North Carolina community

colleges by providing State dollars to leverage federal matching funds via the Yellow Ribbon Program. This program provides a direct match of school funds to offset the cost of the gap for veterans between non-resident tuition rates and the Post 9/11 G.I. Bill, which pays only up to the resident tuition rate.

The System Office Technology Solutions and Distance Learning Division supports this agency goal by streamlining financial aid processes and providing access to educational opportunities online. This includes:

- Development and implementation of two application interfaces for the College Information System in partnership with the College Foundation of North Carolina and Ellucian Incorporated: State Grant and Institutional Student Information Record (ISIR) Verification Interfaces. These interfaces streamline financial aid verification and award processing, reducing the time and effort required by both students and community college staff to process financial aid applications and awards.
- Service delivery and partnership with the Virtual Learning Community and Learning Object Repository are two services providing quality educational resources, courses, research, and training opportunities to ensure a rigorous curriculum supported by quality digital learning resources that are matched to the programmatic and course outcomes for our system.

4.4.3 Oversight for community colleges through governance, tracking, and best practices

The System Office provides oversight for the community colleges and provides assistance through governance, tracking, and identification and implementation of best practices. The goal is to facilitate constituent access to affordable higher education, training, and completion of continuing education credentials. These are important components when creating community college environments capable of delivering a workforce skilled not only to meet the current business need but also the ability to shape future technologies.

Oversight initiatives identified as priorities by the agency include:

- State Board Code – The System Office is updating the State Board Code that manages the agency and services delivered and maintained for the community colleges. As such, the State Board will adopt rules that are clear and consistent with State law while promoting the System’s mission, by June 30, 2016. This will improve governance efforts at both the agency and local community college level.
- State Authorization – The Higher Education Opportunity Act as revised in 2010 contains requirements for program integrity of distance learning. The System Office guides the colleges through the changing environment of state authorization of distance learning and conducts training and workshops for compliance and best practices. The college options include national reciprocity, regional reciprocity, or state-by-state approvals per institution.
- Data Initiative – The goal of the Data Initiative is to establish a robust data system that provides accurate and accessible information that fosters a culture of data-driven decision making which addresses research questions and informs policies. This initiative will ensure access to reliable data by identifying and defining data elements, augmenting current reporting tools, and improving data extraction validation

methods. The Data Initiative will assist the System Office in tracking the data collected and maintained by the agency and the community colleges, resulting in improved decision making through data analysis.

The System Office Technology Solutions and Distance Learning Division supports this agency goal by providing utilities to improve information tracking through the use of data analytics. The Division developed the SAS Tools and Training program in partnership with SAS Institute, Inc. (SAS). This program provides higher education analytical software licensing and technical training from SAS to the 58 community colleges at no cost. This initiative aligns with the Office of Information Technology Services' One IT guiding principle of try before you buy while increasing state agency business capabilities through the use of big data and analytics.

5 North Carolina Community College System Office Technology Solutions and Distance Learning Division Vision, Mission, and Values

5.1 Technology Solutions and Distance Learning Division Vision

The North Carolina Community College System Office Technology Solutions and Distance Learning Division provides accessible, reliable, and modern learning technologies that enable North Carolina's community college success.

5.2 Technology Solutions and Distance Learning Division Mission

The North Carolina Community College System Office Technology Solutions and Distance Learning Division serves the North Carolina Community College System through the delivery of modern, quality educational resources that enable academic citizens to achieve their educational and career goals through technology-enhanced solutions while aligning to the State Chief Information Officer's One IT infrastructure.

5.3 Technology Solutions and Distance Learning Division Values

Integrity – Transparency with the academic citizens and vendors in which we do business

Accountability – Ownership of work that the Division performs

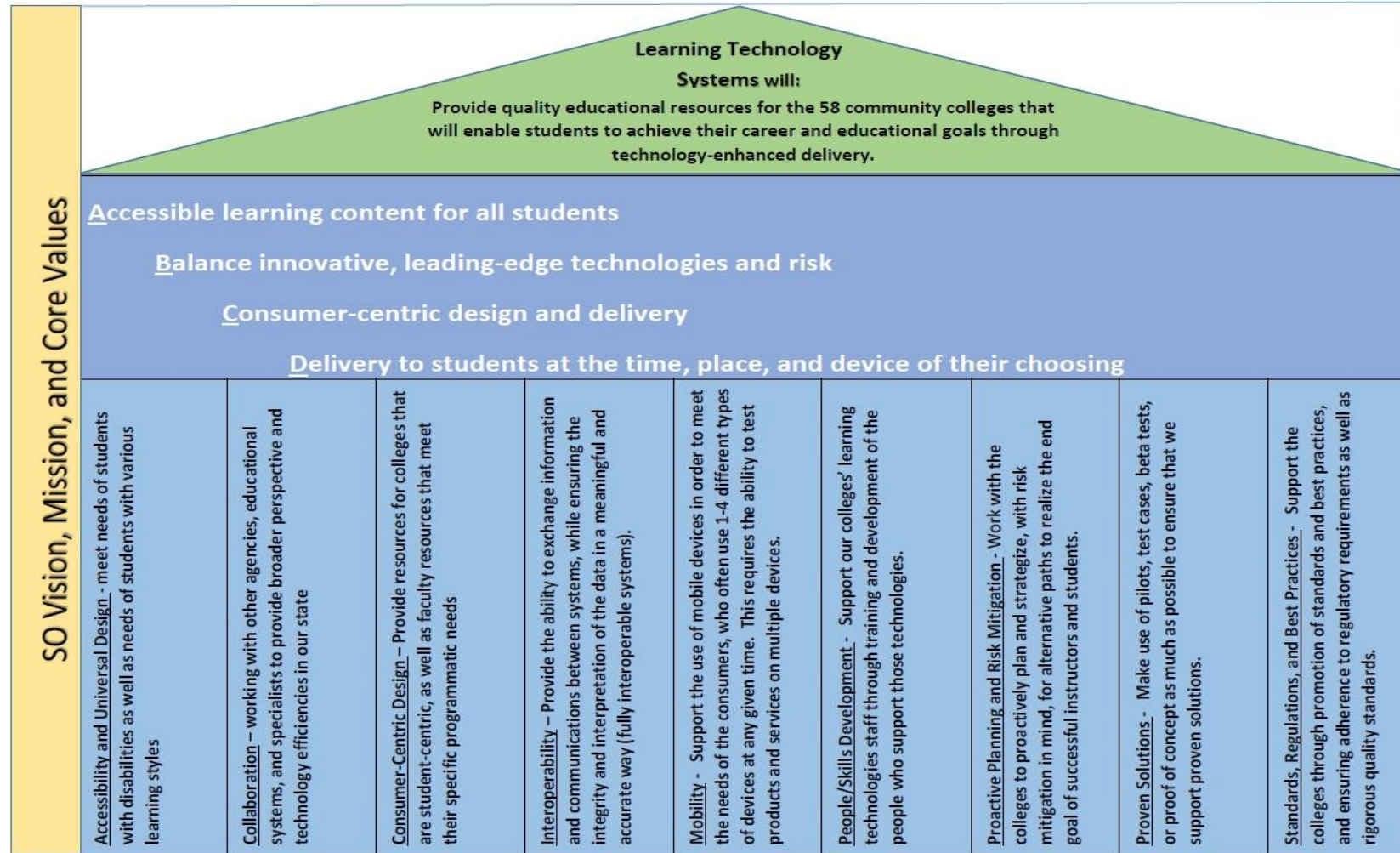
Collaboration – Identification and breakdown of system-wide silo technologies

Service – Simplify the academic citizen's ability to conduct business with the system

5.4 Technology Solutions and Distance Learning Division Strategic Diagrams



Academic citizen*: persons involved with NCCCS including, administrators, faculty, staff, students, Boards, legislators, and agencies



6 North Carolina Community College System Office Technology Solutions and Distance Learning Goals, Objectives and Initiatives

6.1 Goal 1 – College Information System (CIS) Modernization

6.1.1 Objective – Provide community colleges with technologies that meet current and future business needs.

6.1.1.1 College Information System (CIS) Hosting

This initiative is focused on the vision of the agency to modernize its technologies for administrators, faculty, staff, students, Boards, legislators, and other state agencies. This initiative balances cloud first technology with shared vendor risks. The agency will identify a hosting model approach that provides selected hosting services for up to 58 community colleges statewide with clearly defined roles and responsibilities for each community college, the System Office, and vendor(s).

The vision for hosting the CIS is as many community colleges that can host will host over a period of time.

Costs: To be developed between fourth quarter 2014 to first quarter 2015

Expected outcome: Transition instances located on local community college campuses to cloud based solutions. The System Office is prepared to engage all potential hosting providers, including the Office of Information Technology and third party private solution providers, to determine the best service level and value. The System Office expects to enhance business continuity and disaster recovery processes as well as reduce the burden on local community colleges to maintain adequate technical support staff.

Funding: Expansion Budget Request

Evaluation measures and success criteria: Successfully operate a community college Colleague environment from a hosted environment at OITS.

Timeframe: 2014-2019

6.1.1.2 College Information System Platform Migration

A project will be started to move all 58 Unidata systems to a SQL database.

Costs: To be determined fourth quarter 2014 through first quarter 2015

Expected outcome: All 58 community colleges will run on a SQL database and a common template.

Funding: CIS Special (Accrual) Fund

Evaluation measures and success criteria: This initiative requires 100% conversion by the community colleges and the agency.

Timeframe: 2014-2019

6.2 Goal 2 – Improve Data Quality and Electronic Reporting

6.2.1 Objective – Establish a robust data system that provides accurate and accessible information that fosters a culture of data-driven decision making which addresses research questions and informs policies.

The Technology Solutions and Distance Learning Division Business Intelligence Team supports the Data Warehouse used to create Federal, State, and locally mandated reports created with community college and System Office data. This includes providing support for the local community colleges with data analysis to help make decisions for policy based on this data. The team leverages Business Objects, SAS, Sybase, Informatica, and other software technologies to produce reports for the community colleges, agency, and other private and public entities.

6.2.1.1 Data Initiative

The goal of the Data Initiative is to establish a robust data system that provides accurate and accessible information that fosters a culture of data-driven decision making which addresses research questions and informs policies. This initiative plans to achieve this goal by following business objectives that will drive technology solution development:

- Expand the individual and collective inquisitiveness of stakeholders within the North Carolina Community College System to ask research questions that inform decisions and policies.
- Develop data definitions based on research needs and reporting requirements.
- Ensure data integrity and consistency through appropriate and uniform entering and collecting of information across the System so data extracted are valid and reliable.
- Incorporate a data review process that ensures accountability through the validation of submitted data.
- Develop focused topic-based data marts that will serve a wide variety of analytical research needs including, but not limited to, strategic initiatives, grants, and business and student centric needs.
- Expand information accessibility by making all data users aware of the availability of predefined reports, web-based dashboards, statistical software, and training.

Costs: TBD

Expected outcomes: The Data Initiative expects to develop an updated data dictionary for the College Information Management System, consolidate dissimilar data stores into manageable, normalized data marts, and leverage SAS data analytics software to produce electronic reporting interfaces that provide robust reporting solutions for the System Office and the community colleges.

Funding: System Office operating budget

Evaluation measures and success criteria: The primary goal of the data initiative is to reduce error rates in data reporting from the community colleges to the System Office to a level at or below 5%. The initiative is currently concluding the data element review phase and specific

error rates are not available at time of publication. A review of work conducted to date – specifically steps taken to implement validation checks at data entry and consolidation of data element definitions – is expected to equate to quantifiable measurements for future reports.

Timeframe: 2012-2018

6.2.1.2 SAS Tools and Training

The goal of the SAS Tools and Training initiative is to improve the ability of the System Office and community colleges to generate electronic reports and reporting interfaces. Utilizing the components contained in the master grant agreement between the North Carolina Community College System and SAS®, the initiative provides software, training, and support to individual community colleges with the goal of increasing data analytics quality for the entire community college system.

Costs: No cost for software, training, and support

Expected outcomes: The SAS Tools and Training initiative expects to deliver modern reporting software from a leading data analytics vendor to the System Office and community colleges with the goal of increasing quality. The no cost training sessions provided by the grant agreement will provide staff with required training to use the software effectively.

Funding: Grant agreement delivers licensing and software to agency and community colleges at no cost.

Evaluation measures and success criteria: This initiative expects to have licensed analytical software distributed and installed at 10% of the community colleges by the end of 2015, with 80% of the colleges installed by 2018. Additional success criteria include community colleges using SAS dashboard technologies as well as generating and delivering electronic reports with this technology as licensed software deployments increase.

Timeframe: 2014-2019

6.3 Goal 3 – Continuously Improve Access, Communications, Operations, and Maintenance

6.3.1 Objective 3 – Engineer infrastructure and business processes to align with future agency and community college technology requirements.

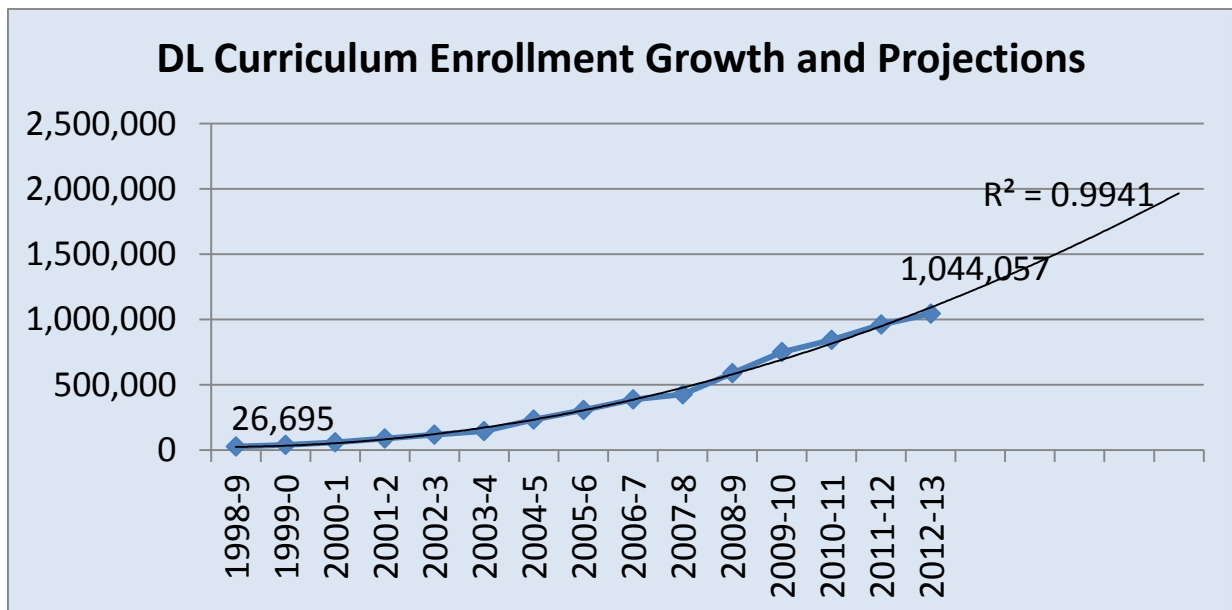
6.3.1.1 Learning Technology Systems

Learning Technology Systems provides quality educational resources for the 58 community colleges that enable students to achieve their career and educational goals through technology-enhanced deliveries. Examples of the Learning Technology Systems include:

- Virtual Learning Community
- Learning Management Systems
- Online Help Desk
- Virtual Computing Environment
- Learning Object Repository

- Virtual Learning Community
- Library Resources
- NC ATLAS

The System Office recognizes the importance of delivering educational opportunities to citizens at any time, any place, and to any device. The mobile technologies maintained and operated within the Learning Technology Systems provides many of these services. The chart below details the past and projected enrollment of community college students who have and will use this technology.



Each of the following initiatives support the growing need for Learning Technology Systems.

6.3.1.1.1 North Carolina Learning Object Repository

The North Carolina Learning Object Repository (NCLOR) provides a centralized location for the acquisition, collection, sharing, and management of quality learning resources for educators in North Carolina. The collection includes documents, audio/video clips, simulations, learning modules, assessments, and more – virtually any type of learning resource that can be digitized and processed. Teachers from around the state can then search the NCLOR, find materials appropriate to the classes they are teaching, and use them as is or modify them to suit their needs. This concept of sharing and reusing is the core of the NCLOR philosophy. Teachers can become more productive and efficient by utilizing quality, existing, and free course and digital material.

Representatives from all NC educational sectors (NCCCS, UNC, and Independent Colleges & Universities) participated in the creation and development of the NCLOR from inception to production.

The NCLOR is managed by the System Office but is a collaborative effort between the North Carolina Community College System and the North Carolina Department of Public Instruction.

Costs: TBD

Expected outcomes: The NCLOR will centralize hosting to reduce costs of hardware and IT, provide capability for instructors to share Learning Object items, enable newly developed items to be moderated, improved, deployed, and shared, reduce duplication of efforts and save development resources statewide, integrate easily with a Learning Management System (LMS) for ease of course creation, provide the ability to set permissions for client populations, generate reports and track usage, and conform to standards governing content, protocol, and federation.

Funding: General Fund appropriation

Evaluation measures and success criteria: The NCLOR is in ongoing maintenance and operations but continues to provide the benefits conceptualized at inception. The agency will adopt an appropriate performance measurement process for this effort in conjunction with the Office of Information Technology Services to ensure effective tracking of performance and reporting.

Timeframe: 2014-2019

6.3.1.1.2 Learning Management Systems – Moodle, Blackboard, Support

The System Office maintains and operates Learning Management Systems for the community colleges. This includes three components: two methods of delivering educational opportunities electronically (Moodle and Blackboard) and the support mechanism for both solutions.

Moodle Managed Services (SaaS)

This SaaS solution provides a 24x7x365 integrated course management solution, hosted hardware, application administration, administrator help desk support, and training to sustain the centralized Moodle implementation with the capacity to support at least three Moodle instances per college. This solution also provides consistency of services and training across the system while still allowing branding of the online course delivery for the local college and offering the computing power, data storage, and Moodle expertise that the colleges do not have or could not afford without System Office support. This initiative is in the operations and maintenance phase.

Blackboard

Licensing for the Blackboard application is provided by the System Office for the community colleges. The Blackboard solution offers a collaborative, interactive, and mobile learning environment through the use of virtual classrooms. This technology embraces the ‘any device, anytime, anywhere’ guiding principle as well as delivering effective and necessary services for the community colleges and their customers.

Support

The System Office currently supports both the Blackboard and Moodle environments through the Blackboard Student Support Services (online helpdesk). All 58 colleges may use the 24x7x365 help desk that provides comprehensive support for students and faculty for their chosen LMS. The System Office is investigating consolidation of help desk support services with the College Information Systems Help Desk at the System Office, but additional resources and staffing would require investment and commitment to 24x7x365 support.

Costs: TBD

Expected outcomes: The System Office expects the Learning Management Systems to be cornerstone for distance learning delivery to citizens across the state of North Carolina. This technology reduces costs, removes geographic barriers to educational opportunities, and provides access to information on demand.

Funding: General Fund appropriation

Evaluation measures and success criteria: The success of both Blackboard and Moodle is based on community college usage and at this time each college uses at least one of these virtual classroom solutions. Criteria for evaluating the proposed support solution will be developed during the project planning phase and are not available at this time. The agency will adopt the performance measurement process recommended by the Office of State Budget Management to ensure effective tracking of performance and reporting.

6.3.1.1.3 Virtual Computing Environment (VCE)

Students and faculty can use a number of advanced computer applications on Linux, Solaris, and numerous Windows environments. The VCE addresses the increasing needs of both local and distance students and faculty by providing 24x7 access to state-of-the-art secure advanced computing laboratory facilities for students, either in classroom or individually. Access to VCE services can be (1) at the direction of classroom instructors or (2) for individual student coursework on an anytime, anyplace basis. The private VCE cloud is developed and delivered by NCSU and provides remote desktop access to learning environments specific to courses students are taking. The core concept is to provide access to software packages 'in the cloud' that do not require the student to have a license for the software.

Costs: TBD

Expected outcomes: Reduced costs for North Carolina citizens through shared, on demand software licensing. Removes barriers to custom educational laboratory and classroom learning environments. Encourages collaboration between the university system, community colleges, students and faculty.

Funding: General Fund appropriation

Evaluation measures and success criteria: This initiative is in ongoing operational maintenance, and the agency will adopt the performance measurement process recommended by the Office of State Budget Management to ensure effective tracking of performance and reporting.

6.3.1.2 High School Equivalency Assessment

North Carolina currently offers the General Educational Development (GED®) Test as the high school equivalency assessment that leads to a North Carolina High School Equivalency credential. From July 1, 2012 through June 30, 2013, 25,744 North Carolina residents took the GED® Test at official testing site locations. North Carolina awarded 14,300 GED® diplomas during this period. At the writing of this document, the System Office has issued Request for Proposal #50-NCCS071114 to identify a vendor who can satisfy mandatory requirements for the paper-based and computer-based High School Equivalency Assessment test.

Costs: TBD

Expected outcomes: Implement a commercial off-the-shelf solution for both paper and computer-based test for the High School Equivalency Assessment. The selected solution will meet the North Carolina State Board of Education standards known as the Common Core State and North Carolina Essential Standards. Implementation is slated for January 1, 2015-December 31, 2015 with the option to renew for two additional one-year periods. Selected vendor will provide all hardware, software, and required platforms to deliver assessments for computer-based testing and related materials for paper-based testing.

Funding: System Office operating budget

Evaluation measures and success criteria: Reporting methodologies to track evaluation and success criteria will be developed and adopted as recommended by the Office of State Budget Management to ensure effective tracking of performance and reporting.

Timeline: January 1, 2015-December 31, 2015 with option for two one year renewals

6.3.1.3 Microsoft Technologies

The System Office leverages the educational discount to acquire licensing for Microsoft business automation software. At this time, the agency foresees implementation, operations, and maintenance for the following applications and applications suites. The System Office has been a leader for the State in adopting and deploying Microsoft cloud-based technologies.

6.3.1.3.1 Microsoft Office 365 Services

The System Office has utilized Microsoft cloud e-mail services for three (3) years starting in 2011 with Live@EDU and is now utilizing Office 365 services. Office 365 offers a complete set of business tools for the System Office including e-mail, Office 2013 Professional for all staff, Lync, SharePoint Online, OneDrive, and Project Online. Additionally, the System Office meets the requirements of Executive Order 12 by utilizing Microsoft Exchange Online with Litigation Hold. The agency is currently piloting the use of OneDrive for remote collaboration and file management.

Costs: \$15,000.00 Annually

Expected outcomes: The agency expects to reduce desktop management through the use of cloud-based office applications and provide a value added employee benefit through extended licensing to up to five devices for agency employees.

Funding: System Office operating budget

Evaluation measures and success criteria: All agency staff members will receive access to Office 365 business automation utilities by December 31, 2014.

Timeline: 2013-2015

6.3.1.3.2 Microsoft SharePoint

Microsoft SharePoint is the underlying technology for the College Information Management System Portal application (Ellucian Portal, see 6.3.1.4.1). This interface provides community colleges with the ability to build fully integrated web presence that allows students, faculty, and staff access to information from any web enabled device. The System Office uses this

technology for its intranet site, and the agency has realized collaboration efficiencies through its use. The agency plans to investigate SharePoint 2013 and SharePoint Online as upgrade paths.

Costs: TBD

Expected outcomes: Greater agility in information sharing, collaboration, and file management

Funding: System Office operating budget

Evaluation measures and success criteria: TBD

Timeline: 2013-2019

6.3.1.4 CIS Template Enhancement

CIS Template enhancements include Ellucian modules System Office developed enhancements that will be folded into the modernized College Information System.

Costs: Varies by module

Expected outcomes: Increased efficiencies through improved access and streamlined business workflows

Funding: System Office operating budget

Evaluation measures and success criteria: Varies by module

Timeline: 2013-2019

6.3.1.4.1 Ellucian Mobile and Ellucian Portal

In order to meet the growing demand for ‘any device, anytime, anywhere’ technologies, the System Office and community colleges agree that these two modules are critical to system success. Both modules integrate into the existing Colleague College Information Management System maintained and operated by the System Office. These applications simplify access to student data while providing security features to allow access and authentication through federated services. The expectation of these modules is online access to community college information for students from any location from any device, reducing turnaround times and increasing student success.

6.3.1.4.2 Ellucian Self-Service

Ellucian Self-Service is a replacement of the current web-based model named WebAdvisor. Self-Service is currently composed of two modules: Student Planning and Student Finance.

The Student Planning module is a web-based self-service tool that aligns students, advisors, and institutions to help students graduate on time. This concept is a key driver for SuccessNC and Completion by Design initiatives undertaken by the System Office. It is expected that this module would provide a level of automation and access for both staff and students at community colleges to simplify pathways to graduation and increase graduation rates.

The Student Finance Module presents a holistic view of a student’s account activity at a community college and allows students and staff to share the same view to resolve students’ questions about their account balances.

6.3.1.4.3 Ellucian e-Transcripts

The Ellucian e-Transcripts module removes the need for manual transcript processing by staff at community colleges and provides students on demand access to critical information required by employers. It is expected that this technology would reduce turnaround times for transcript access, reduce costs associated with processing and printing services, and improve security for student data.

6.3.1.5 CIS Template Enhancements for Student and Finance Systems

CIS Template enhancements for Student and Finance systems are in response to legislative changes, requests from business partners such as UNCGA, and changes in business requirements requested by other divisions of the System Office or community colleges.

6.3.1.5.1 Ellucian FA Hub

The Ellucian FA Hub module is expected to be available in the third quarter of 2015 and will provide online access for student financial aid data. The FA Hub provides a self-service Financial Aid checklist for students to view and update their financial aid data and awards. It is expected that this technology will provide students with online access to their Financial Aid information, reducing time and costs involved for both community college and citizens.

6.3.1.5.2 Ellucian Elevate

The Ellucian Elevate SaaS Colleague module focuses on continuing education and workforce development programs for the community colleges and System Office. As a course management utility, this module allows college staff to create and publish courses to their online portals and track current and potential student access to this data to improve decision making with real time data analytics and identify student trends. It is expected that this technology would provide a mobile-ready solution that improves student access and result in greater enrollment numbers for community colleges.

6.3.1.6 Agency Infrastructure and Applications

The items listed in this section are hardware and software technologies that are maintained and operated by the System Office.

Costs: TBD

Expected outcomes: Increased efficiencies through improved access and streamlined business workflows

Funding: System Office operating budget

Timeline: 2013-2019

6.3.1.7 Enterprise Project Management Systems

The Technology Solutions and Distance Learning Division will adopt determined processes for all projects to be approved by SCIO per legislation.

6.3.1.7.1 Managed Print Services

The Technology Solutions and Distance Learning Division plans to support managed print services owned by the System Office Finance and Operations Division.

6.3.1.7.2 Human Resource Systems – LMS, BEACON, Performance Management

The Technology Solutions and Distance Learning Division plans to support these in IT owned by other agencies and local HR.

6.3.1.7.3 Firewall

The Technology Solutions and Distance Learning Division will conduct a thorough review and audit of the System Office Cisco ASA5515 Firewalls to ensure optimal configuration to maintain a healthy and secure network.

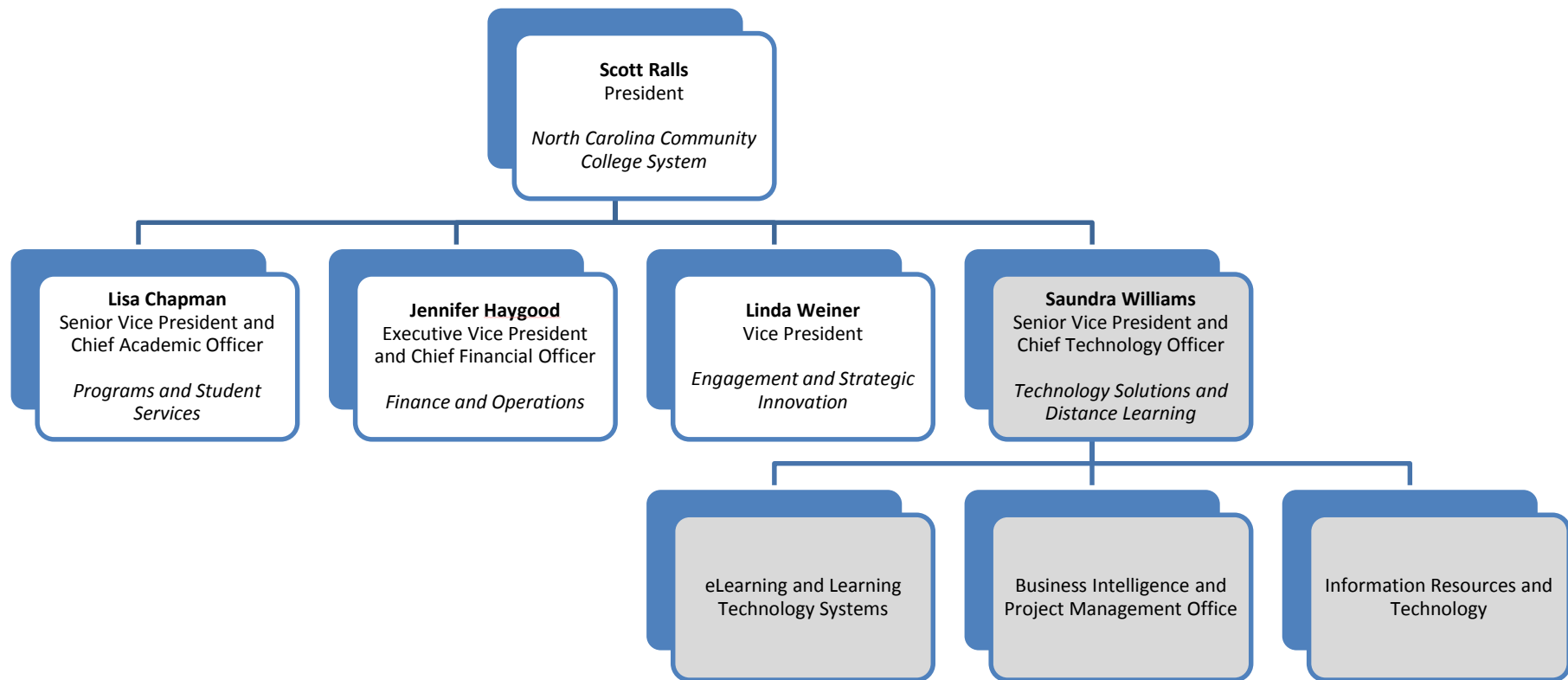
6.3.1.7.4 Core switch

The Technology Solutions and Distance Learning Division will refresh the existing Cisco 4507 Core Switch to maintain a modern, secure, and supported network for the System Office.

6.3.1.7.5 Electronic Forms

The Technology Solutions and Distance Learning Division will adopt the Office of Information Technology Services electronic form process (DocuSign).

7 North Carolina Community College System Office IT Organizational Structure (Reporting Structure)



8 Additional Agency Requirements

8.1 Innovative Funding Solutions

The majority of North Carolina Community College System technology initiatives/activities are supported using the System Office's existing IT staff and operating budget. A specific General Fund appropriation is provided for certain activities, as noted above. In order to plan for significant "refreshes" of CIS, the System Office is authorized to transfer certain funds from its General Fund operating budget to a non-reverting special fund, commonly referred to as the "accrual fund". This annual transfer allows the agency to accrue or save funds to support large, periodic expenses necessary to ensure that CIS remains functional.

8.2 Opportunities for Statewide Initiatives

Contracts Management – The System Office plans to align with applications to be determined by the Office of Information Technology Services.

Grant Management – The System Office plans to align with DOT SAP systems.

Innovation Center Usage – The System Office plans to align as required and available.

Citizens Access Web Technology – The System Office will align with SCIO efforts as they unfold.

Appendix A - List of Major IT Projects

Appendix A provides a list of major IT projects and applications (> \$250,000) that are in progress or planned in this biennium. The table below maps each project to overall goals and strategies.

Project Name	Short Description	Related Goals and Objectives	Summary of Anticipated Benefits	Approximate Timeframe
Sirsi-Dynix Migration	The project will move the Sirsi-Dynix Unicorn Academe Library system from servers located at the System Office to a SaaS environment.	1) Continuously improve access, communications, operations, and maintenance 2) Improve Data Quality and Electronic Reporting 3) College information system modernization by providing community colleges with technologies that meet current and future business needs	1) Reduce hardware and support costs 2) Increase the number of library titles available 3) Improve system availability	Migration complete, project in operations and maintenance, closeout planned for late 2014
CIS Template Platform Migration	The project will move the Ellucian Colleague application from UNIX based database technologies (Unidata) to Microsoft SQL.	1) Continuously improve access, communications, operations, and maintenance 2) Improve Data Quality and Electronic Reporting 3) College information system modernization by providing community	1) Align agency technology roadmap with ERP vendor 2) Reduce hardware and support costs 3) Increase skilled resource availability for maintenance, operations, support, and development 4) Provide the ability to integrate modern data analytics software to improve electronic	2014-2018

Project Name	Short Description	Related Goals and Objectives	Summary of Anticipated Benefits	Approximate Timeframe
		colleges with technologies that meet current and future business needs	reporting	
College Information Systems (CIS) Portal	The project will install, configure, maintain, and operate web enabled interfaces for 58 community colleges.	1) Continuously improve access, communications, operations, and maintenance 2) Improve Data Quality and Electronic Reporting 3) College information system modernization by providing community colleges with technologies that meet current and future business needs	1) Consolidate academic citizen access to community college information to a single point of entry 2) Provide access to community college registration, financial aid, course curriculum, and other educational processes online 3) Increase community college brand awareness	2014-2016

End of document